

# (12) UK Patent Application (19) GB (11) 2 261 763 (13) A

(43) Date of A publication 26.05.1993

(21) Application No 9223171.1

(22) Date of filing 05.11.1992

(30) Priority data

(31) 9123452

(32) 05.11.1991

(33) GB

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(51) INT CL<sup>5</sup>

G09B 15/00

(52) UK CL (Edition L)

G5X X6

(56) Documents cited

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EP 0281214 A

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(58) Field of search

UK CL (Edition L) G5J JEBA JESS, G5X X11 X4 X6

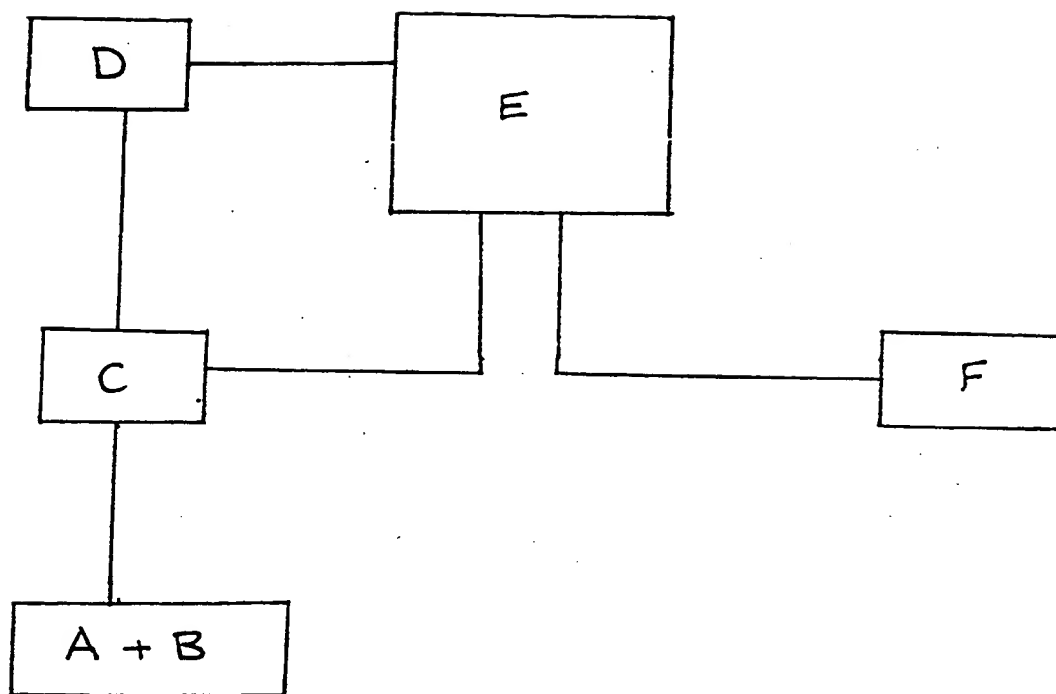
INT CL<sup>5</sup> G09G

Online databases: WPI

(54) Music teaching aid

(57) A music teaching aid comprises a recording of pieces of music recorded at at least slow and performance speeds. A method for producing such a musical teaching aid involves providing a piece of music from a musical instrument or synthesiser, digitally recording said piece of music, processing the digitally-recorded music to produce one or more further pieces of music differing from the original at least in tempo and locating the original and altered pieces on recording material suitable for playback.

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MUSIC TEACHING AID

This invention relates to music teaching aids and, in particular, to recorded musical accompaniments, for instance a piano accompaniment, and to methods for  
5 producing such teaching aids.

Musicians, other than pianists, and singers, usually have a piano accompaniment when they perform, for example at an examination, concert or audition. It is necessary to have  
10 ample preparation and practice with the accompaniment in order to learn the piece thoroughly and to develop understanding and interpretation. This requires a piano and a pianist to be available to meet the needs of the performer.

15 According to the present invention, there is provided a music teaching aid comprising recorded music including musical pieces recorded at slow, moderate and performance speeds. Preferably, the music teaching aid includes  
20 musical notes for guidance in tempo and intonation. The recorded music may be, for instance, musical accompaniment and/or solo music. By way of example, a musical accompaniment may be a piano accompaniment. By way of further example, solo music may include piano music  
25 recorded with left and right hands separately.

The term "music" is intended to cover not just musical compositions but also musical scales and other pieces designed to assist learning rather than intended to be  
30 music as such.

In cases where the musical piece is a slow movement, intended to be performed at a relatively slow speed, the

recorded music may include the musical piece recorded at two speeds only, a slow speed and a performance (in this case equivalent to the moderate) speed.

5 The present invention also provides a method for producing a teaching aid of the invention, the method comprising providing a piece of music, digitally recording said piece of music and processing the digitally-recorded music to produce one or more further pieces of music differing from  
10 the original at least in tempo and locating both the original and altered pieces of music on recording material suitable for playback.

Preferably, the method involves the recording of piano,  
15 vibraphone and metronome which are each digitally recorded, digitally mixed and edited and then transcribed onto analogue tape. Instruments used during recording may be sampled or acoustic instruments. Performance tempo may be that as requested by the customer or as printed in the  
20 music. Moderate tempo may be, for instance, approximately 75% of performance tempo. Slow tempo may be, for instance, approximately 55% of performance tempo.

An embodiment of the present invention will now be  
25 described, by way of example only.

A particular customer may require an audio tape, such as an audio cassette, with accompaniments to three selected pieces for Grade V Flute examination of the Associated  
30 Board of the Royal Schools of Music. An accompaniment is prepared with:

1. recording of:
    - 1.1 notes for tuning the flute ("A");
    - 1.2 Piece 1:
- 35

- Version A: slow (recorded at approximately half the speed of Version (c).  
2 bars of metronome clicks indicating the speed of Version A, which then follows.  
5 Additionally, the melody of the flute is recorded, played on the vibraphone;
  - Version B: moderate speed (recorded at approximately three-quarters of the speed of Version C).  
10 2 bars of metronome clicks indicating the speed of Version A, which then follows;
  - Version C: performance speed, as indicated on the music, or as ordered by the customer.  
15 2 bars of metronome clicks indicating the speed of Version A, which then follows.
- Each version includes additional metronome clicks within the piece, where important changes in tempo occur.
- 20 1.3 Piece 2, as above; and  
1.4 Piece 3, as above.
  - 2. Written instructions to the customer on how to make best use of the recording.
- 25 The recording of the example given above may be prepared using equipment as illustrated in the accompanying drawing which is in block diagrammatic form. This diagram shows computer and software A + B linked to sound source C which in turn is linked to an effects processor D and mixer E.
- 30 Effects processor D is also connected directly to mixer E and the latter is in turn connected to stereo system F. This equipment will now be described in more detail:
- Equipment
- A. computer hardware (e.g. Atari);

B. computer software program (e.g. Cubase Sequencer, C-Lab Sequencer);

C. sound source of piano, vibraphone and metronome (for example:

5	Steinway grand piano	)		
	Vibraphone	)	+ digital	sound
	Metronome	)	recording	
			equipment	

10 or  
synthesizer with Musical Instrument Digital Interface (MIDI) capability (e.g. Korg M1)

or  
sound module, for example EMU Proformance Plus/Roland  
15 R5 + MIDI Keyboard Controller, e.g. Roland PC200;

D. effects processor (e.g. Yamaha FX500);

E. mixer (e.g. Yamaha MV802, Roland M120);

F. stereo system (tape recorder + amplifier +  
loudspeakers) (e.g. Yamaha).

## 20 Method

Step 1: connect all equipment as in Diagram X attached

Step 2: load the program B into Computer A

Step 3: go to MIDI definitions and set the MIDI  
parameters to MIDI Thru On

25 Step 4: go to Mastertrack and enter Time Signature of  
Piece 1 (e.g.  $\frac{3}{4}$ ,  $\frac{4}{4}$ ,  $\frac{6}{8}$ )

Step 5: set Left and Right Locators to number of bars in  
Piece 1 plus introductory metronome bars

Step 6: enter data (music of Piece 1 accompaniment)  
30 using Sound Source C

Step 7: go to Grid Exit and quantize the data: set the  
correct dynamics (volume) and balance of the  
music using musical knowledge and judgement

Step 8: record additional data, i.e. two preliminary  
35 bars of metronome clicks, using Sound Source C,  
and edit as in Step 7

- Step 9: go to Mastertrack and enter tempi variations throughout Piece 1 (performance speed) using musical knowledge and judgement
- Step 10: save data (Piece 1) in Computer Program B
- 5 Step 11: copy Piece 1 for Version B and adjust the tempo as in Step 9, to moderate speed
- Step 12: copy Piece 1 for Version A; adjust tempo to slow speed as in Step 9; add melody line of the flute as in Step 8, played on the vibraphone;
- 10 add metronome clicks as in Step 8, on each beat throughout the piece
- Step 13: using playback of Piece 1, adjust Effects Processor D, according to judgement
- Step 14: record Piece 1 via Mixer E onto audio cassette
- 15 using Stereo System F
- Step 15: repeat Steps 4 to 14 for Piece 2
- Step 16: repeat Steps 4 to 14 for Piece 3.

It should be appreciated that accompaniments may be

20 provided not only for the flute but also for other instruments, including string instruments, wind instruments (woodwind and brass) and for singers.

The accompaniments may be for musical pieces included in

25 examination syllabi, or for any other non-syllabus pieces which a customer may wish to practise. The syllabus pieces may be for any examination grade. The pieces may also be recorded in any desired key, as required by a particular customer. This is particularly useful for singers, who can

30 choose a musical accompaniment to suit the range of their voice.

The recorded accompaniments may include recordings of excerpts from musical pieces rather than entire musical

35 pieces. Where the excerpts are from exam pieces, for

instance, such recordings will be particularly useful for teachers for helping students choose, by sampling a number of the available exam pieces, which to prepare. In this case, the recording may be provided in combination with a  
 5 copy of the music for the solo instrument or singer, for each piece of which an excerpt is included on the recording. Thus, the student or teacher may play or sing along with the recorded excerpts, to get a better feel for the musical piece. Usually, excerpts for one particular  
 10 examination grade and one particular musical instrument/voice would be provided on a single audio cassette.

The recorded accompaniments may include performance  
 15 recordings, of professional performances of relevant musical pieces (e.g. pieces from exam syllabi). Once again, this can assist a student or teacher in choosing which exam pieces to prepare.

20 For use by pianists themselves in learning a particular musical piece, the recorded musical accompaniment would typically include piano pieces recorded at slow, moderate and performance speeds, with each hand preferably recorded separately for the slow and moderate speed recordings.

25

Thus, a recorded accompaniment in accordance with the invention can be provided to suit the needs of any particular musician or singer.

30 An example of an audio cassette, on which a musical accompaniment has been recorded in accordance with the present invention, will now be described.

For this recording, six sample pieces of music have been  
 35 chosen from an exam syllabus. The tape begins with notes



for tuning the instrument. A metonome click indicates the start of each piece with upbeats, as shown on a cassette insert provided with the tape.

- 5 Beethoven Violin Sonata in D, third movement, is the first musical piece in this case. This demonstrates the quality of performance and sound reproduction possible in recordings in accordance with the invention. The performance version is recorded at a tempo requested by the  
10 customer; if no details are requested, the recording follows editor's markings in the edition specified in the syllabus.

The second piece is "A Cradle Song" by Britten, from "A  
15 Charm of Lullabies". This has a deceptively simple melody, heard alone first, but when played with the accompaniment, develops complex harmonies which make pitching difficult. The melody is played on the vibraphone as its distinctive sound is easily heard by a pupil.

20

The third piece is "The Little Horses" from "Old American Songs", arr. Copland. This illustrates rhythmical problems and the need for a thorough knowledge of the accompaniment.

- 25 The fourth piece is Bourree by Telemann, a Grade III violin piece. The three versions (slow, moderate and performance speeds) help in building up the tempo to the required speed. Often during lessons the rhythm is clapped to keep the pupil in time, particularly in the early stages of  
30 practice. For this reason, the metronome is recorded with the melody throughout the slow version (in Grades I-V only). This provides a framework for the pupil to latch on to until he is sure of the rhythm.

The fifth piece illustrates the problems of rhythm and time changes. This is Martinu Clarinet Sonatina, set for Grade VIII. The times signature changes from 2/4 to 6/8, keeping the quaver constant; the metronome click indicates the time changes. The vibraphone is played here to demonstrate the technical difficulty of the solo part; the three versions are again useful for practising rhythms at a slower speed.

Modern works are always included in the syllabus. Pupils can find these more difficult to grasp if they are not so familiar with the style; also the accompaniment is often technically difficult. Frequent practice with the pianist is therefore required. Thus, the final example on the tape is the end of the third movement of Lennox Berkley's Sonatina for Oboe.

The above illustrates how a recorded accompaniment in accordance with the invention can be of great assistance to both pupils and teachers alike. Using the slower speed recordings of each piece, precision and dexterity can be built up, working towards the standard of the performance speed recording at the pupil's own piece. Whilst the above example includes pieces of different standards and for different instruments, as illustrations, a tape would normally include recordings for one particular pupil, including recordings for the same instrument and standard.

CLAIMS

1. A music teaching aid comprising recorded music  
5 including musical pieces recorded at slow, moderate and performance speeds.

2. An aid according to Claim 1 in which the music is a piano accompaniment.

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3. An aid according to Claim 1 in which the music is solo music.

4. An aid according to Claim 3 in which the solo  
15 music is piano music recorded with left and right hands separately.

5. A method for producing a music teaching aid, the method comprising providing a piece of music, digitally  
20 recording said piece of music and processing the digitally recorded music to produce one or more further pieces of music differing from the original at least in tempo and locating both the original and altered pieces of music on recording material suitable for playback.

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6. A method according to Claim 5 including digitally recording piano, vibraphone and metronome, digitally mixing and editing the recordings and then transcribing the recordings onto analogue tape.

30

7. An aid according to Claim 1 and substantially as herein described.

8. A music teaching aid substantially as described  
35 in the specific embodiment.

9. A method according to Claim 1 and substantially as herein described.

10. A method for producing a music teaching aid  
5 substantially as described with reference to the specific embodiment.

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

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Application number

GB 9223171.1

Relevant Technical fields

- (i) UK Cl (Edition L ) G5X (X4,X6,X11); GJJ (JEBA, JESS)
- (ii) Int Cl (Edition 5 ) G09B

Search Examiner

MISS S E WILLCOX

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Date of Search

18 FEBRUARY 1993

Documents considered relevant following a search in respect of claims 1, 5

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
Y	GB 2237435 A	(SEIKO EPSON) see Figure 2 and page 11, lines 9-14	5 at least
Y	GB 1509530	(KIRK) see page 1, lines 68-74 and page 7, lines 126 - page 3, line 16	5 at least
Y	EP 0281214 A	(ZYKLUS) whole document especially column 10, line 45	5 at least
X, Y	FR 002402262 A	(LOBAK) see page 6 lines 14-21	1, 5 at least

Category	Identity of document and relevant passages	Relevant to claim(s)

### Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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